

Application
for
United States Patent

To all whom it may concern:

Be it known that, Marc Thorne
has invented certain new and useful improvements in a

METHOD AND APPARATUS FOR DETECTING LOCATING A RECREATIONAL
DEVICE

of which the following is a full, clear and exact description:

**METHOD AND APPARATUS FOR DETECTING AND
LOCATING A RECREATIONAL DEVICE**

FIELD OF THE INVENTION

[0001] The present invention relates generally to locating and object. More particularly, the present invention relates to tracking and locating a snow recreational device once it becomes detached from a skier.

BACKGROUND OF THE INVENTION

[0002] Recreational equipment, such as that used in snow, includes skis, snowboards, sleds, snow shoes plus many others. These devices enable people to use the snow for recreational activities. The devices include a number of components for safety protection and overall performance. For example, initially skiers used a rigid binding that attached to the ski boot worn by a skier. However, the rigidity of the binding had some negative aspects or drawbacks. It was determined that a skier was more apt to injure themselves once a skier lost control of their upright position and proceeded to fall to the ground. The rigidity of the binding kept the boot from separating from the binding. Injuries that were incurred were broken bones along with muscle and ligament damage. Some of the injuries were so severe due to the rigidity of the bindings that some skiers were not able to return to the slopes.

[0003] As a result of this finding, a less rigid binding was developed. The reduction of the rigidity enables the ski to become detached once the skier lost control of their upright position. This had the effect of reducing the injuries to the skier. A skier was now able to ski a slope without the fear of incurring a serious injury in the instance of a fall or crash.

[0004] The downside of the rigidity was the result it created. Once the ski was detached, it became what is known as a runaway ski. The ski would proceed down slope without the skier. One obvious annoyance occurred in that the skier did not have a complete set of skies to continue their decent down the slope. The skier would then have to walk down the rest of the slope.

[0005] Another problem is the potential hazard the runaway ski had on other skiers. The runaway ski could proceed down the hill and hit any number of skiers within its path. This could and has resulted in serious injuries to other people on or near the slopes.

[0006] One solution disclosed in the prior to deal with a runaway ski was a boot strap. The strap was attached to a binding and then looped around a ski boot. When a ski became dislodged from the skier, the ski was prevented from becoming a runaway ski. The boot strap restrained the ski once it became detached.

[0007] One problem that was discovered with the bootstrap was that it still could injury a skier almost as seriously as the rigid binding. The strap was usually only of

a certain length. This would prevent the dislodged ski from being removed a safe distance away from a falling skier. Many bootstraps had the effect of pulling back the ski and striking the skier in a number of locations on their body. It also resulted in a higher number of injuries similar to those of the rigid binding. At this point, this was a need for a device to replace the bootstrap.

[0008] One prior art solution to the runaway bootstrap was a ski brake. The traditional ski brake is a two-prong device that is positioned parallel or horizontally to the ski when the skier places the ski boot in the binding. Once the skier becomes dislodged from the ski, the ski brake is activated and the prongs are positioned perpendicular to the ski. This prevents the ski from running away too far from the skier and injuring other skiers.

[0009] A couple of things occur with the ski brake. The ski has some initial movement and provides an adequate distance away from the skier once it becomes dislodged. One of the downsides of this is that the ski can become lost. This is especially true in more powder snow conditions. In these conditions, the dislodged ski becomes detached but is unable to be found quickly and easily because the ski is buried beneath the powder snow. It is quite possible for a skier to be unable to locate a ski once it becomes detached. Powder snow in some instances is not sufficient basis to stop the ski with the brake in a relative short distance as what usually occurs in more hard-packed snow conditions. Furthermore, icy conditions could cause a detached ski to

travel farther away from a skier as opposed to pack snow conditions. This again could make it more difficult for the skier to locate the ski.

[0010] The same concerns apply to snowboards, sleighs, snow shoes, water skis and so forth. Accordingly, it is desirable to provide a device that enables a skier to easily and efficiently track a detached recreational device such as a snow or water ski and snowboard. There is a further need to be able to use this device with a safety detaching mechanism.

SUMMARY OF THE INVENTION

[0011] It is therefore a feature and advantage of the present invention to provide a method and apparatus that enables a user of recreational device such as a ski or snowboard the ability to be able to locate the device with ease if it becomes detached during use.

[0012] In another aspect of the invention, it is desirable to provide a method and apparatus that is easily detached once the recreational device becomes detached or dislodged from its user.

[0013] The above and other features and advantages are achieved through the use of a novel method and apparatus that includes a pouch for storing a locator that is extracted once the recreational device becomes detached from the user as herein disclosed. In accordance with one embodiment of the present invention, an apparatus for locating a snow recreational device includes a pouch that has a first opening in the pouch and a retainer attached to the pouch. The

locator is positioned in the pouch so that it can be extracted through the first opening in the pouch. The pouch also contains a second opening that enables the locator to be placed or located within the pouch. The locator is attached to a fastener, which is linked or connected to recreational device. In the preferred embodiment, the locator is a color that is identifiable in the environment in which the recreational device is being used.

[0014] In the preferred embodiment, the fastener attaches to the snow recreational device such as a ski. In particular, the fastener attaches to the brake or binding on the ski.

[0015] The retainer, in the preferred embodiment, is positioned around an object that can become detached from the snow recreational device such as the ski boot of the skier.

[0016] In an alternate embodiment of the present invention, a method for determining the location of a snow recreational device includes attaching a fastener to the snow recreational device and extracting a locator positioned within a pouch in response to the snow recreational device becoming detached. This embodiment can also include positioning a retainer, attached to the pouch, about an object that can become detached from the snow recreational device.

[0017] In another alternate embodiment, a system for determining the location of a snow recreational device includes means for holding that include a first opening, means for locating a locator within the means for retaining and means for fastening the means for holding to an object. This

embodiment can further include means for securing the system to a recreational device.

[0018] In a further alternate embodiment of the present invention, an apparatus for locating an object includes a pouch comprising a first opening and a locator located in the pouch and configured to fit through the first opening. This embodiment can also have a retainer attached to the pouch and a fastener linked to the object and locator.

[0019] There has thus been outlined, rather broadly, the more important features of the invention in order that the detailed description thereof that follows may be better understood, and in order that the present contribution to the art may be better appreciated. There are, of course, additional features of the invention that will be described below and which will form the subject matter of the claims appended hereto.

[0020] In this respect, before explaining at least one embodiment of the invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and to the arrangements of the components set forth in the following description or illustrated in the drawings. The invention is capable of other embodiments and of being practiced and carried out in various ways. Also, it is to be understood that the phraseology and terminology employed herein, as well as the abstract, are for the purpose of description and should not be regarded as limiting.

[0021] As such, those skilled in the art will appreciate that the conception upon which this disclosure is based may readily be utilized as a basis for the designing of other structures, methods and systems for carrying out the several purposes of the present invention. It is important, therefore, that the claims be regarded as including such equivalent constructions insofar as they do not depart from the spirit and scope of the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0022] FIG. 1 illustrates several elements of a preferred embodiment of the present invention.

[0023] FIG. 2 illustrates several elements of in one embodiment of the present invention as it links to a ski boot.

[0024] FIG. 3 illustrates several elements of in one embodiment of the present invention as it links to a ski.

[0025] FIG. 4 is an illustration of one embodiment of the present invention in the situation where the ski becomes detached from the ski boot.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS OF THE INVENTION

[0026] A preferred embodiment of the present invention provides a method and apparatus for locating a detached snow recreation device.

[0027] A preferred embodiment of the present inventive apparatus and method is illustrated in FIG. 1. A pouch 10 is attached to a retainer device 12. The retainer device 12 has

two ends 14, 16 that enable the device to be placed around the user of the snow recreation device. In the preferred embodiment, the ends 14, 16 of the retainer device 12 are secured around the lower part of the leg of the user. However, other possible embodiments can have the retainer 12 secured around a boot used in conjunction with the snow recreation device, a wrist plus many other locations.

The pouch 10 is a holding structure for the locator 18. The locator is placed into the pouch 10 by opening the pouch entrance 20. The locator 18 is placed within the pouch 10 so that it will be able to freely exit the pouch 10 in an efficient manner. The locator 18 exits the pouch through an opening 22. If the locator 18 is placed in the pouch 10 such that it does not full exit or get tangled within the pouch 10, then the locator 18 becomes more difficult to locate as opposed to it exiting freely or without any entanglement.

[0028] In the preferred embodiment, the locator 18 has a bright illumination color in order to enable the user of the snow recreation device to locate it once it has become attached. For example, the user is skiing in deep snow powder conditions, which covers the skier's lower half of their leg. At some point, the ski becomes detached from the skier but the skier continues to move forward a certain distance from where it became detached. Without the present invention, the ski could take any number of directions from where it became detached and is buried beneath the snow powder conditions. The skier will need to backtrack to where the ski became detached and try and locate the ski. This is a very efficient

way to locate the ski because the detached ski can be in a number of locations.

[0029] With the present invention, once the ski becomes detached, the locator 18 is pulled or extracted from the pouch 10. The locator 18 remains attached to the ski in order for the ski to be located. In the present invention, the locator 18 is colored such that it enables the skier to find the ski in an efficient manner. The present invention uses a neon pink color, which it enables the device to be more easily noticeable in the snow. The present invention is not in any way limited by the color of the locator 18. One of ordinary skill in the art recognizes the wide variety of colors available to the user of the present invention.

[0030] The pouch 10, in the preferred embodiment, is a vinyl coated pack cloth. A flap 24 is located on the patch to enable the user to place the locator 18 within the pouch opening 20 of the pouch 10. The flap is a hook and loop flap or Velcro™ to enable the user to easily and efficiently open and close the flap 24. The retainer 12, in the preferred embodiment, is attached to the opposite side of the pouch 10 from the opening 22. By locating the retainer 12 opposite to the opening 22, the locator 18 is able to be removed from the pouch 10 without interruption from the retainer 10.

[0031] The locator 18 is placed within the pouch 10 with a small portion of it extending through the opening 22. The portion that extends from the opening 22 contains an attachment device 26. In the preferred embodiment, the attachment device 26 is placed at one end of the locator 18.

In the preferred embodiment, the attachment device 26 is a molded spring clip. There are a vast number of differing attachment devices 26 such as hooks, latches, pins and fasteners. The present invention is not limited to the attachment device 26 in the preferred embodiment.

[0032] The attachment device 26 is linked or attached to a fastener 28, 30, which is attached to the snow recreational device. In the preferred embodiment, the fastener 28 includes two ends. At one end of the fastener 28 is a ring 30 to which the attachment device 26 of the locator 18 is attached. At the opposing end of the fastener 28 is a looped end 42. The looped end 42 enables the fastener 28 to be attached to the snow recreational device. Alternate embodiments of the present invention include the opposing end of the fastener 28 having a spring clip, hook, latches, pins and fasteners.

[0033] FIG. 2 illustrates several elements of in one embodiment of the present invention as it links to a ski boot. FIG. 2 illustrates how the pouch 10 is attached in connection with a snow recreation device, which is one embodiment of the present invention. The pouch 10 is positioned at the upper end of the ski boot 34 with the retainer device 12. The ends 14, 16 of the retainer device 12 are secured together. This enables the retainer device 12 to remain positioned around the ski boot 34. The ends of the retainer 14, 16 are also adjustable such that they can be lengthened or shortened based upon the width of the ski boot. The adjustability of the ends 14, 16 allow the retainer device 12 to be placed around

varying widths of ski boots as well as other devices used in alternate embodiments. The retainer device 12 can actually be placed around a limb of the user without the necessity of a harder or alternate surface separating them.

[0034] In FIG. 2, the pouch 10 is placed on the outside of the ski boot 34. In the preferred embodiment of using the present invention on a ski, this positioning prevents the present invention from becoming entangled with a similar device that is placed on the alternate ski boot. For example, if a user positions the pouch 10 on the interior position of the ski boot, there is the possibility that the two devices could become entangled with one another during a normal course of use. In alternate embodiments, it is possible to place a first pouch on the inside position of a first ski boot and a second pouch on the outside position on a second ski boot. Other embodiments of the present invention position the pouch 10 on the user. Such locations can be the calf, the upper torso, the leg, the thigh, the waist and any other position desired by the user.

[0035] The pouch 10 serves as a deposit for the locator 18. The pouch 10 includes the flap 24. The flap 24 is placed over an opening 22 to which access is gained to where the locator 18 is stored. The locator 18, is coiled inside the pouch 10. The end of the locator 18, which contains the attachment device 26, is threaded through the opening 22. The end of locator 18, that is opposite the attachment device 26, is threaded through opening 22 from the outside of pouch 10. This end is pulled through large opening

20 until approximately 6 inches of end 18, 26 is hanging out of opening 22, and the rest of locator 18 is hanging outside opening 20. The locator 18 that is hanging outside of opening 20 is carefully packed in an accordion like fashion back in pouch 10 through opening 20. The length of the locator 18 extending from the pouch 10 can be adjusted by extracting the needed length located within the pouch 10.

[0036] FIG. 3 illustrates several elements of one embodiment of the present invention as it links to a ski. FIG. 3 is illustrative of how the locator 18 is connected or linked to the fastener 28, which is attached to a ski 36. On most if not all skis, a spring brake 38 is placed forward of the rear portion of the binding 40. When the ski boot is not in the binding 40, the brake 38 is forced into perpendicular position to the ski 36. The positioning perpendicular to the ski acts to prevent the ski from moving forward once it becomes dislodged from the skier. The brake is deactivated or placed in a non-stopping position when the skier places the ski boot 34 into the binding 40. The ski boot 34 pushes the ski brake 38 into a parallel position with the ski 36. As a result, the skier is able to ski without any hindrance from the ski brake 38.

[0037] In the preferred embodiment, the fastener 28 is attached to the ski brake 38. To do this, a closed loop 42 is created at one end of the fastener 28. The closed loop 42 is looped around the ski brake 38 and the fastener 28 pulled through the closed loop 42 to create "slip knot". By looping

it through the closed loop 42, the fastener is attached to the ski 36.

[0038] To link the fastener 28 to the locator 18, the ring 30 at the opposing end of the locator 18 from the closed loop 42 is attached to the locator 18 with the attachment device 26. Once connected, a sufficient length of locator 18 is extracted from the pouch 10 to enable the skier to move freely with entangling any parts of the present invention, ski equipment or clothing. In the preferred embodiment, the locator 18 and fastener 28 are pulled to a position to ensure that either device does not interfere with anything.

[0039] FIG. 4 is an illustration of one embodiment of the present invention. In the figure, the ski becomes detached from the ski boot. In this illustration, the skier 44 is using the ski 38 to move across the top of the snow 46. The skier 44 is wearing a ski boot 34. Located on the ski boot 34 is the pouch 10. At some point for any number of reason, the ski 36 becomes detached from the skier 44, more specifically the ski boot 34.

[0040] Once the ski boot 34 becomes detached from the ski 36, the ski brake 38 is activated and the ski brake 38 is thrust into a perpendicular position to the ski 36. The ski brake 38 is thrust into this position to stop the ski 36 from going forward. At the same time the ski boot 34 becomes detached from the ski 36, the locator 18 is extracted from the pouch 10. The locator 18 is then sought out by the skier 44 in order to find detached ski 36.

[0041] The present invention allows the ski 36, in the preferred embodiment, to maintain the safety that was introduced with the ski brake 38. This is done by allowing the locator to become completely detached from the pouch 10. In the instance the ski 36 and the skier 44 become detached, as with the ski brake 38, they are separated such that the loose ski 36 does not become a hazard to the skier 44.

[0042] The present invention is most effective in snow powder conditions. Snow powder conditions are those in which the snow base is not packed down into a uniform surface. The ski or other recreational device, in most snow powder conditions rides through and on top of the snow on the ground. In packed snow conditions, the ski or other recreational device in snow packed conditions runs on top on the snow base.

[0043] In using the present invention in conjunction with a ski 36 in snow powder conditions, the ski 36 is riding through the snow. At some point when the ski 36 becomes dislodged or detached, it generally stays below the surface of the snow. With the present invention, it becomes easier for the skier 44 to locate the ski 36. In the snow powder conditions, the skier 44 will have to "back-track" from the point of detachment and make estimations as to the possible location of the detached. With the present invention, the ski 36 is almost instantly located because the pouch 10 and the majority of the locator 18 are positioned above the snow before the detachment occurs.

[0044] When the detachment of the ski 36 occurs, the skier 44 becomes detached from the ski 36. As the skier 44 is

pulled or moves away from the dislodged ski 36, the locator 18 is pulled from the pouch 10. The locator 18 stays attached to the ski 36 as it proceeds in the dislodged direction. The locator 18 trails the ski 36 as it proceeds to move. When the skier 44 begins to conduct a search of the dislodged ski 36, the locator 18 is easily spotted. This enables the skier 44 to locate the ski in a quick and efficient manner.

[0045] The depth of snow powder conditions may, in some circumstances, necessitate the placement on the pouch 10. For example, if the pouch 10 and the locator are below the surface of the snow, then it is possible that the locator 18 will be below the surface of the snow, which will make it more difficult for the skier 36 to locate the detached ski 36. If, upon measurement of the snow conditions, the pouch 10 and the locator 18 will ride below the surface of the snow, the pouch 10 should be move so that it will be not be below the surface 46. Alternate embodiments of the present invention include the present invention used with snowboards, cross country skies, snow shows, sleds, water skies and skates. The present invention is intended to cover any device that can be detached from a user while it is being used.

[0046] The many features and advantages of the invention are apparent from the detailed specification, and thus, it is intended by the appended claims to cover all such features and advantages of the invention, which fall within the true spirits and scope of the invention. Further, since numerous modifications and variations will readily occur to those skilled in the art, it is not desired to limit the

invention to the exact construction and operation illustrated and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.